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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CROCKFORD, KIRSTEN ANNE	
ART UNIT	**PAPER NUMBER**
1762	6

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/622,942	BASTABLE ET AL.	
	Examiner	Art Unit	
	Kirsten Crockford	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 March 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. The 35 USC 112 rejections have been withdrawn in response to Applicant's amendments and arguments. The 35 USC 103 rejections over EP '040 have been withdrawn in response to Applicant's arguments. The claims are newly rejected as set forth below.

Claim Objections

2. Claim 25 is objected to because of the following informalities: It appears that -- polyolefin-- is missing between "acid-anhydride" and "resin" in the amended claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 17, 19, and 24-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim17, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). For the purposes of examination, claim 17 is interpreted as only requiring use of a phosphate.

In claim 19, line 2, the phrase "prior to organic resin coating" is vague and indefinite because it is not clear what organic resin coating refers to. Does it refer to the thermoplastic resin coating of claim 1, or is it a different organic resin coating that is applied?

In claim 24, lines 2-3, the limitation "wherein the chemically-treated strip is coated with thermoplastic resin *together with* a bonding layer [emphasis added]" is vague and indefinite. Does this claim require that the bonding layer and thermoplastic resin layers are applied to the treated substrate simultaneously? What is meant by "together with"?

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 6, 7, 13, 14, 17-20, 24, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Henricks (US 2,588,234).

In Example XV in column 16, Henricks teaches a low carbon steel (a mild steel) is first cleaned and then coated with a phosphatic paint by immersing in a bath of calcium dihydrogen phosphate, and then the substrate is further treated with a coating solution comprising paraffin which is a thermoplastic polymer (col. 16, lines 18-26). As to claim 24, it is noted that an antimony oxide-zinc borate paint is applied to the phosphate-coated substrate as a bonding layer. The process of Henricks would inherently produce a laminated mild steel strip.

7. Claims 1-3, 6-7, 12-14, 19-20, and 27-30 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 97/16582 A1 (US 6,280,852 B1 to Shimizu et al. is used as a working translation of WO '582).

WO '582 teaches a method of coating steel sheet, such as low carbon (mild) steel, with a chromium layer followed by a chromium oxide layer and a thermoplastic coating (all of col. 2 of Shimizu et al., and specifically lines 3-6). WO '582 teaches that chromium oxide layer is applied by immersion in a bath containing chromate (col. 3, lines 50-54 of Shimizu et al.). Applicant's broad "comprising" language reads on the inclusion of additional coating layers such as the first chromium layer. In the Examples in column 4 of Shimizu et al., the reference teaches use on a cold-rolled steel sheet, and it also teaches a preliminary step of cleaning. The Examples also teach immersion in a chromate bath at 45°C, and rinsing and drying after coating. WO '582 teaches using a polypropylene thermoplastic resin film, and teaches that the thickness of the thermoplastic resin film is 3-50 μm. WO '582 also teaches that the steel sheet of its invention is used for producing cans, specifically food cans.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 2-4, 8-12, 17, 21-23, 26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henricks.

As to claims 3 and 4, Henricks does not disclose the gauge of the steel sheet. It is the Examiner's position that it would have been obvious to one having ordinary skill in the art to have selected a particular gauge of steel sheet depending on the end use of the treated steel sheet product with the expectation of achieving similar results with any gauge. As to claim 2, it is noted that Henricks does not teach that the steel sheet is cold-rolled. However, the Examiner notes that cold-rolled steel sheets are very common in the art and one skilled in the art would have been motivated to treat cold-rolled steel sheets in the manner taught by Henricks with the expectation of successful results.

With respect to claims 8-11, Henricks does not disclose the residence time of the steel sheet in the phosphating bath. However, one skilled in the art would have been motivated to minimize the residence time for efficiency reasons while also determining the residence time so that the phosphate treatment is effective. It would have been obvious to one having ordinary skill in the art to have determined the optimum residence time through routine experimentation in the absence of a showing of criticality. *In re Aller*, USPQ 233 (CCPA 1955). As to claim 12, it is noted that since Henricks does not teach a particular temperature of the phosphating bath, it is the Examiner's position that it would have been obvious to one skilled in the art to maintain the phosphating bath at room temperature for simplicity and economic reasons since there is not a teaching otherwise.

As to claims 22 and 23, it is noted that Henricks does not teach applying the thermoplastic paraffin coating by extrusion. The Examiner notes that extrusion coating of polymeric materials, including paraffin coatings, are known in the coating art and it is the Examiner's position that it would have been obvious to have applied the paraffin coating by any

known means, including extrusion coating, with the expectation of similar results since the means used to apply the coating does not affect the end product. With respect to claims 26 and 28, Henricks does not teach the thicknesses of the antimony oxide-zinc borate coating or the paraffin-containing coating. One skilled in the art would have been motivated to minimize the coating material needed for economic reasons while also determining the amount of coating material that is sufficient to achieve the desired results. It would have been obvious to one having ordinary skill in the art to have determined the optimum coating thicknesses through routine experimentation in the absence of a showing of criticality.

10. Claims 4, 8-11, and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/16582 A1 (US 6,280,852 B1 to Shimizu et al. is used as a working translation of WO '582).

Claims 4 and 8-11 are rejected for the same reasons explained above in paragraph 8. With respect to claims 21 and 22, it is noted that WO '582 teaches that the thermoplastic coating is applied by heat laminating (see Examples). The Examiner notes that it is well known in the coating art to apply thermoplastic coatings by a number of methods including heat laminating and extrusion coating, among others. It would have been obvious for one having ordinary skill in the art to have applied the thermoplastic coating on the treated steel substrate by extrusion coating instead of heat laminating with the expectation of similar results since the two methods are known to be equivalent in the coating art.

11. Claims 1-4, 6-14, 17-20, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murase (US 4,305,994).

Murase teaches in Example 5 a method of coating a zinc phosphate-treated mild steel sheet with a polymeric coating comprising a thermoplastic polymer. Murase does not specifically state a step of cleaning the mild steel sheet prior to phosphate-treating. The Examiner notes that it is well known in the coating art to clean substrates prior to coating in order to remove contaminants which detrimentally affect the adhesiveness of the coating on the substrate surface. It would have been obvious for one having ordinary skill in the art to have cleaned the steel substrate prior to phosphate treatment with the expectation of improving the effectiveness and the adhesion of the phosphate coating.

As to claims 6-7, 12, and 19, it is noted that the specifics of the phosphate treatment are not disclosed in Murase. However, it is noted that it is well known in the metal treatment art to perform phosphate treating by immersion in a room temperature phosphate bath which is necessarily contained within a vessel, and followed by drying the substrate. It would have been obvious to one having ordinary skill in the art to have performed the phosphate treatment of Murase by immersion in a room temperature phosphate bath followed by drying with the expectation of successful results since such is so well known in the art as a means for conducting phosphate treatment.

Claims 2-4, 8-11, and 28 are rejected for the same reasons explained above in paragraph 8.

12. Claims 1-4, 6-18, 20, 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caldwell et al. (US 4,532,159).

Caldwell et al. discloses a process of coating a mild steel sheet (see Example 1) with a flash-rust protecting composition comprising a thermoplastic polymer (such as polyvinyl chloride, polyvinylidene chloride, polyethylene) (col. 2, lines 19-35), and a corrosion-inhibiting pigment comprising an oxyanion (col. 3, lines 3-15). It is noted that Applicant's broad "comprising" language reads on applying two or more layers of Caldwell et al.'s paint composition. The transitional term "comprising," which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 948) ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amounts"). Caldwell et al. teaches applying its coating by brushing, spraying or rolling. In each of these application methods, it is known that coating is often performed by making two or more passes over the same area with the roller, sprayer or brush in order to ensure that the substrate was entirely coated. It would have been obvious for one having ordinary skill in the art to have applied two (or more) thin layers, by making first and second passes on top of one another with the roller, sprayer or brush, with the expectation of similar results obtained when only doing a single, thicker coating pass with the roller, sprayer or brush.

With respect to claim 7, it is noted that Caldwell et al. does not teach applying its composition by immersion. The Examiner notes that immersion is a well known means for

applying coatings such as paints to substrates. It would have been obvious for one skilled in the art to have applied the coating of Caldwell et al. to steel substrates where the coating is desired on both sides by immersion instead of brushing, spraying, or rolling with the expectation of similar and successful results since immersion would result in the same coated product, and since immersion efficiently coats both sides of a substrate at the same time. As to claim 12, Caldwell et al. teaches that the paint composition is applied at room temperature.

Caldwell et al. teaches that the oxyanion may be a phosphate such as zinc phosphate, a chromate, a silicate, etc. of zinc, manganese or iron. As to claim 15, Caldwell et al. teaches that the composition may comprise copolymers which is a two component organic polymer. As to claim 16, it is noted that Caldwell et al. does not specifically teach using two corrosion-inhibiting pigments together, such as a silicate and chromate, however it is the Examiner's position that since Caldwell et al. teaches the use of both individually that it would have likewise been obvious to one skilled in the art to have used two pigments in combination with the expectation of equivalent and successful results. It is noted that claim 18 reads on having no chromium in the coating composition. With respect to claim 27, it is noted that Caldwell et al. does not specifically teach polypropylene polymers in col. 1. However, Caldwell et al. teaches "mono-ethylenically unsaturated hydrocarbons, for example ethylene"; propylene is a well known ethylenically unsaturated hydrocarbon similar to ethylene. It would have been obvious for one skilled in the art to have selected polypropylene as the homopolymer or as a component in a copolymer in the paint composition of Caldwell et al. with the expectation of similar and successful results since Caldwell et al.'s list is not exhaustive or limiting.

Claims 2-4, 8-11, and 28 are rejected for the same reasons explained above in paragraph 8.

13. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Henricks, WO '582, Murase, or Caldwell et al. as applied to claim 1 above, and further in view of Baker et al. (US 3,775,151).

The references of Henricks, WO '582, Murase, and Caldwell et al. lack a teaching of cleaning the steel substrates prior to treatment by electrolytic cleaning. Baker et al. is cited to demonstrate that it is well known in the steel coating art to first clean the steel substrate by electrolytic cleaning. Baker et al. states at column 4, lines 26-36 and column 11, line 66 to column 12, line 6 that electrolytic cleaning is a process known in the prior art, particularly for low carbon (mild) steel strip. It would have been obvious to one having ordinary skill in the art to have cleaned the steel substrates of Henricks, WO '582, Murase, or Caldwell et al. electrolytically with the expectation of successful results since the cleaning process is well known in the art.

14. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Henricks, Murase, or Caldwell et al. as applied to claim 29 above, and further in view of WO 97/16582 A1.

Henricks, Murase, and Caldwell et al. lack the teaching that the final product of their inventions can be used as cans, such as for food. WO '582 teaches that the mild steel sheet of its invention can be used to produce a food can. One skilled in the art, upon seeing the references of WO '582 in combination with Henricks or Murase or Caldwell et al., would have been motivated

to produce food cans using the steel treatment and thermoplastic coating methods of Henricks, Murase, or Caldwell et al., in place of the method of WO '582, with the expectation of producing a food can having the steel benefits taught by Henricks or Murase or Caldwell et al.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Goodhart et al. (US 5,657,603) is cited because it teaches the elements of claim 1 except it is directed to thermosetting resins. Heyes (US 5,238,517) and Heyes et al. (US 5,149,389) are directed to coating thermoplastic coatings over phosphate treated "blackplate" which is defined as mild steel in the specification. Kissel (US 5,135,780) teaches coating with a composition comprising a thermoplastic polymer and oxyanion salts.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten Crockford whose telephone number is 703-306-5461. The examiner can normally be reached on Monday to Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193.

kac
June 3, 2002

SHRIVE P. BECK
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